

Title (en)  
Double direction seal with locking

Title (de)  
Versiegelung in doppelter Richtung mit Sperre

Title (fr)  
Joint bidirectionnel avec blocage

Publication  
**EP 2273163 B1 20180328 (EN)**

Application  
**EP 10168603 A 20100706**

Priority  
• US 22394709 P 20090708  
• US 82814310 A 20100630

Abstract (en)  
[origin: EP2273163A2] Lip type rotary seal assemblies are generally discussed herein and particularly those with double directional sealing, wherein the tip of the two sealing lips (26, 28) point in opposite directions. A locking ring (22) is incorporated to retain the seal assembly (10) in the housing. The seal is configured to provide different sealing forces at each end to provide flexibility and enhanced performance where two different conditions on each side of the seal can exist, such as different sealing medium, fluid viscosity, pressure, and rotary speed.

IPC 8 full level  
**F16J 15/32** (2016.01)

CPC (source: EP US)  
**F16J 15/3212** (2013.01 - EP US); **F16J 15/3232** (2013.01 - EP US); **F16J 15/3236** (2013.01 - US); **Y10T 29/49826** (2015.01 - EP)

Citation (examination)  
US 2009166982 A1 20090702 - KONDO YOSUKE [JP], et al

Cited by  
CN104595493A; EP2846068A3; EP3830456A4; US10107428B2; US9194497B2; EP3217046B1

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK SM TR

DOCDB simple family (publication)  
**EP 2273163 A2 20110112; EP 2273163 A3 20131120; EP 2273163 B1 20180328**; JP 2011017438 A 20110127; JP 5757696 B2 20150729; US 10520091 B2 20191231; US 2011006486 A1 20110113

DOCDB simple family (application)  
**EP 10168603 A 20100706**; JP 2010155803 A 20100708; US 82814310 A 20100630